were satisfactory and very much appreciated by the patients, with the exception of Case 5.

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DISEASE OF THE AORTA AS SHOWN BY FLUOROSCOPIC STUDY.

By SAMUEL ELLSWORTH BAILEY, M. D.,
Berkeley, California.

During the past year, I have been handling the work of the x-ray department of Fabiola Hospital and many kinds of cases have passed through my hands for diagnosis or treatment, nearly all being cases referred by other physicians. The hospital fortunately has an adequate roentgenological equipment of which an excellent fluoroscope is part. Much use has been made of the opportunity thus afforded and a large number of cases screened routinely.

While all parts of the body may be examined roentgenoscopically, the fluoroscopic shadows or images thus obtained vary greatly in value and significance. Of all such shadows, those cast during fluoroscopic examination of the thorax give the most definite information and yield the most satisfactory and suggestive results. This is due to the slight resistance offered by the lung tissue and the great contrast between the latter and the heart and great vessels. As an additional consideration, there is the mobility of the chest wall, the diaphragm, and the pulsation of the heart and great vessels. The images or shadows cast by these moving parts give definite, discernible outlines and contrasts that cannot be obtained in organs comparatively static.

In fluoroscopy of one hundred and fifty odd patients of all ages, there have been eighteen cases that showed definite fluoroscopic evidence of aortic disease. In a majority of instances there were no physical signs or symptoms directly referable to the vascular system and certainly not to the aorta. Many of the cases were observed incident to the course of a roentgenological examination of the gastro-intestinal tract; in some there was clinical suspicion of trouble "somewhere" in the chest.

The conditions ranged in severity from purely functional cases of dilated heart with accompanying dilated aorta (recovering quickly under rest, etc.) through cases of moderate organic dilatation both with and without the deposition of calcareous placques (often easily visible in the screen) to small, unimportant dilatations and shallow aneurisms—finally to very large life endangering aneurisms.

It will be observed that the Wassermann reaction was positive in six of the eighteen, negative in ten and undetermined in two of the series. Seven of the cases are under forty years of age; of these seven, five gave positive Wassermanns, one a negative and one was undetermined. Eleven cases are over forty; of these only one, a woman, gave a positive Wassermann. In the five cases under forty with positive Wassermanns there were definite small sacculations in all but one case, this in a young man of twenty-seven who, however, had a dilated aorta (8 cm.) with calcareous placques and these predominately of the ascending and transverse arm of the aorta. The ten cases with negative Wassermanns are with one exception all over forty and mostly over fifty. In these elderly people, the small aneurisms, often without symptoms or signs occur practically always in the transverse or descending portion of the arch and are incidents of an arteriosclerotic degeneration, whereas the luetic type more commonly affects the ascending aorta.

Aneurisms are accidents due to the chance occurrence of a lesion in a large vessel with a relative disproportion between the pressure of blood in that vessel and the thickness and tensile strength of that vessel's wall. Many small lesions occur in small arteries and sclerosis with obliteration of the vessel occurs. This cannot happen in large vessels like the aorta. The size and extent of the resulting aneurisms are determined by the pressure and direction of flow of the blood stream and the character of the surrounding tissue.

In syphilitics with the usual accompanying high blood pressure and active mesaortitis, the aneurism is apt to become rapidly and progressively larger with early rupture; in the small incidental aneurisms of arteriosclerotic type, unless there is coincident high blood pressure from other cause, e. g., nephritis, there may be little or no progressive increase in size—in fact, arrest may and does frequently occur. The majority of statistics give as luetic 60% to 85% of aneurisms. Hausman is the only man who depreciates this cause, giving only 18.7% as syphilitic (quoted from Adami). This figure naturally represents varieties which have been recognized clinically and which are usually fairly rapidly fatal.

The particular point to which I wish to call attention is that there exist many small dilatations and aneurisms which are clinically unrecognizable for many years; that these are mostly non-specific and may present no symptoms or signs, or at most indefinite and trivial ones. That eventually they may become a menace to the health or life of the individual due to progressive arterial degeneration or the incidence of increased blood pressure due to intercurrent disease, e. g., nephritis or sudden strain from muscular exertion or extreme emotion. Their early diagnosis is only possible by means of x-ray examination and particularly fluoroscopic examination since here the amount of pulsation and the elasticity of the aortic wall may be estimated. Early

There follows a brief outline of the cases, together with a schematic chart arrangement:

No.	Sex	Age	Clinical	Fluoro-Diagnosis	Wassermann
1	M	35	Suspected	Small of ascending	Positive
2	F	68	Unrecog.	Large of transversal	?
3	M	48	Unrecog.	Small of trans. and desc.	Negative
4	M	50	Unrecog.	Sac. of trans. and dec.	Positive
5	F	45	Suspected	Small of abd. aorta	Positive
6	F	43	Unrecog.	Dilatation	Negative
7	M	36	Unrecog.	Small fus. asc.	?
8	F	31	Unrecog.	Mod. asc. ao. and dilated	Positive
9	M	27	Unrecog.	Dilated aorta 8 cm.	Positive
10	M	38	Recog.	Large fusiform asc.	Positive
11	F	68	Suspected	Dilatation with placques	Negative
12	M	40	Unrecog.	Small asc. ao. fusiform	Negative
13	M	45	Unrecog.	Diffuse dilatation	Negative
14	M	60	Suspected	Small sac. of arch	Negative
15	F	38	Unrecog.	Shallow of trans. and des.	Negative
16	M	35	Unrecog.	Dilated fusiform	Positive
17	M	60	Suspected	Dilated trans. sac.	Negative
18	M	56	Suspected	Dilated	Negative

diagnosis of such conditions would permit a timely warning to the patient so affected and might thus materially lengthen life besides being an immense source of satisfaction to the physician.

Routine fluoroscopic examinations are suggested as a valuable auxiliary to life and industrial accident examinations; they should be employed as a means of estimating the extent of the damage in known cases of arteriosclerosis and should particularly be made in arteriosclerosis known to be of luetic origin, since here early fatal aneurisms are most prone to occur; in heart cases such examinations may be used as a control to therapeusis and as a check on clinical signs.

If in doubt, see, as well as feel and hear, and common experience teaches that information thus obtained tends to strengthen rather than weaken the acuity of perceptions gathered by methods of palpation, percussion, and auscultation, for it as frequently confirms as denies impressions so gained and thus links visual with auditory and sensory perceptions.

TREATMENT OF SYPHILIS OF THE CENTRAL NERVOUS SYSTEM.*

By RICHARD W. HARVEY, M. D., San Francisco,
Instructor in Medicine, University of California Medical School.

TREATMENT OF SYPHILIS OF THE CENTRAL NERVOUS SYSTEM.

My object in presenting this paper is to discuss the treatment of lues of the central nervous system with the emphasis on vigor and thoroughness. We all know how discouraging has been the prognosis and how inadequate our treatment. I insist that we have lacked woefully in thoroughness of treatment, and in recognizing that every case of primary lues holds the potentialities of central nervous system lues; and it is in the early stage that we should begin treatment and force it hard.

How often has a primary sore, followed by secondaries, received a single salvarsan, sufficient to dissipate the rash, and a few inunctions or injections, with or without K. I.! The subject has interested me during several years' experience in the Nerve Clinic of the University of California Medical School, and I have gone over a large number of records to discover just how much treatment the average tabetic or cerebro-spinal luetic has received before seeking our aid. Fifty-three out of a hundred patients admitted a primary sore, ranging from four months to thirty-seven years before coming to us, the average being sixteen years. Of these, some described secondaries, but in all the histories the ratio stood twenty-nine to one hundred who had had secondaries. The great majority of primary infections occurred years before the Wassermann test was known, but seventeen patients out of a hundred had had the blood tested. Forty-five out of a hundred had been treated in some form or another ranging from cauterization to salvarsan; but not a single instance of treatment could be characterized as *vigorous, consistent,* and *adequate.* This is, indeed, startling! Is it any wonder that we who have treated nervous lues have followed a forlorn hope, and have thrown up our hands in despair of mastering the problem?

What is the reason for this acknowledged failure? We must look for it in our own negligence or carelessness or lack of far-sightedness. Perhaps, too, we have been swayed by the patient's indifference and have failed to secure his co-operation. It is true that the recognition of paresis and tabes as of syphilitic etiology is a comparatively recent development; but we find the tendency too free, even to-day with our knowledge of Noguchi's work, to neglect the luetic patient in early stages and to limit the treatment to a few doses of salvarsan and a little mercury. Economic conditions, of course, contribute to this delinquency. The patient regrets the loss of time and money in pursuing his treatment, and I regret that it is too true that many physicians with their knowledge of the disease and of its chronic, progressive nature, fail to take the time and trouble to explain the necessity for adequate treatment, and to strive for the patient's co-operation.

In examining the treated cases in my series, mixed treatment was recorded in the largest number, but fourteen out of sixteen received one year or less. Salvarsan was administered in thirteen cases out of a hundred, five receiving two doses, three receiving three doses, and one as many as nine doses. The greatest number of mercury injections received was forty-three. A single intraspinal treatment had been administered.

In tuberculosis the layman has some knowledge

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